



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2022-0385; Project Identifier MCAI-2021-00786-E; Amendment 39-22117; AD 2022-14-12]**

**RIN 2120-AA64**

**Airworthiness Directives; GE Aviation Czech s.r.o. (Type Certificate previously held by WALTER Engines a.s., Walter a.s., and MOTORLET a.s.) Turboprop Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain GE Aviation Czech s.r.o. (GEAC) M601D-11, M601E-11, M601E-11A, M601E-11AS, M601E-11S, and M601F model turboprop engines. This AD was prompted by the absence of life limits for propeller shaft part number (P/N) M601-6081.6 in the airworthiness limitations section (ALS) of the applicable GEAC M601 Engine Shop Manual. This AD was also prompted by a report that operators may not have been provided with enough data to determine the accumulated life of certain propeller shafts. For M601F model turboprop engines, this AD requires removal and replacement of the propeller shaft before the propeller shaft accumulates 12,000 flight hours (FHs) since first installation on an engine, or before accumulating 350 FHs after the effective date of this AD, whichever occurs later, with a part eligible for installation. For M601D-11, M601E-11, M601E-11A, M601E-11AS, and M601E-11S model turboprop engines, this AD requires calculation of the accumulated life of the propeller shaft and, depending on the number of accumulated FHs removal and replacement of the propeller shaft with a part eligible for installation. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this final rule, contact GE Aviation Czech s.r.o., Beranových 65, 199 02 Praha 9, Letňany, Czech Republic; phone: +420 222 538 111. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0385.

### **Examining the AD Docket**

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0385; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Barbara Caufield, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7146; email: [barbara.caufield@faa.gov](mailto:barbara.caufield@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain GEAC M601D-11, M601E-11, M601E-11A, M601E-11AS, M601E-11S, and M601F model turboprop engines. The NPRM published in the *Federal Register* on April 01, 2022 (87 FR 19029). The NPRM was prompted by the absence of life limits for propeller shaft P/N M601-6081.6 in the ALS of the applicable GEAC M601 Engine Shop Manual. The NPRM was also prompted by a report that operators may not have been provided with enough data to determine the

accumulated life of certain propeller shafts. For M601F model turboprop engines, the NPRM proposed to require removal and replacement of the propeller shaft with a part eligible for installation before the propeller shaft accumulates 12,000 FHs since first installation on an engine, or before accumulating 350 FHs after the effective date of this AD, whichever occurs later. For M601D-11, M601E-11, M601E-11A, M601E-11AS, and M601E-11S model turboprop engines, the NPRM proposed to require calculation of the accumulated life of the propeller shaft and, depending on the number of accumulated FHs, removal and replacement of the propeller shaft with a part eligible for installation. The FAA is issuing this AD to address the unsafe condition on these products.

The European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2021-0154, dated July 1, 2021 (referred to after this as “the MCAI”), to address the unsafe condition on these products. The MCAI states:

It has been determined that the life limit for the propeller shaft P/N M601-6081.6 is not published in the applicable ALS for M601 engines. In addition, it has also been reported that some data, which can be used to determine the accumulated life of certain propeller shafts, may have not been provided to operators, so the propeller shaft life limit may not have been implemented correctly.

These conditions, if not corrected, may lead to failure of a propeller shaft, possibly resulting in detachment of the propeller and consequent damage to the engine and/or the aircraft, and reduced control of the aeroplane.

To address this potential unsafe condition, GEAC issued the original issue of the ASB, providing applicable instructions, and EASA issued AD 2021-0052 to require implementation of the applicable life limit and replacing each propeller shaft with a serviceable propeller shaft.

Since that [EASA] AD was issued, additional data, which can be used to determine the accumulated life of certain propeller shafts, and to support an extended compliance time for Group 1 engines, has been made available; GEAC revised accordingly the ASB (now at revision 02).

For the reasons described above, this [EASA] AD partially retains the requirements of EASA AD 2021-0052, which is superseded, introducing updated affected population and different compliance times.

You may obtain further information by examining the MCAI in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0385.

## **Discussion of Final Airworthiness Directive**

### **Comments**

The FAA received no comments on the NPRM or on the determination of the costs.

### **Conclusion**

The FAA reviewed the relevant data and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

### **Related Service Information under 1 CFR Part 51**

The FAA reviewed GE Aviation Czech Alert Service Bulletin (ASB) ASB-M601F-72-10-00-0056 [02], ASB-M601D-72-10-00-0072 [02], ASB-M601E-72-10-00-0103 [02], and ASB-M601Z-72-10-00-0056 [02] (single document; formatted as service bulletin identifier [revision number]), dated May 31, 2021. This service information specifies procedures for calculating the accumulated life of certain propeller shafts and also specifies procedures for replacing certain propeller shafts. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

### **Costs of Compliance**

The FAA estimates that this AD affects 14 engines installed on airplanes of U.S. registry. The FAA estimates that 7 M601D-11 and 7 M601E-11 model turboprop engines installed on airplanes of U.S. registry require calculation of the time since new (TSN) of the propeller shaft and removal and replacement of the propeller shaft. The FAA estimates that zero M601E-11A, M601E-11AS, M601E-11S, and M601F model

turboprop engines installed on airplanes of U.S. registry require replacement of the propeller shaft.

The FAA estimates the following costs to comply with this AD:

**Estimated costs**

<b>Action</b>	<b>Labor Cost</b>	<b>Parts Cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Calculate the total TSN of the propeller shaft	1 work-hours x \$85 per hour = \$85	\$0	\$85	\$1,190
Remove and replace the propeller shaft	105 work-hours x \$85 per hour = \$8,925	\$17,827	\$26,752	\$374,528

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

**Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

**Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the

national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this AD:

(1) Is not a “significant regulatory action” under Executive Order 12866,

(2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2022-14-12 GE Aviation Czech s.r.o. (Type Certificate previously held by WALTER Engines a.s., Walter a.s., and MOTORLET a.s.):** Docket No. FAA-2022-0385; Project Identifier MCAI-2021-00786-E.

#### **(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to:

(1) GE Aviation Czech s.r.o. (GEAC) M601F model turboprop engines with an engine serial number (ESN) listed in Attachment 1, List of Affected Engines - Group 1, of GE Aviation Czech Alert Service Bulletin (ASB) ASB-M601F-72-10-00-0056 [02],

ASB-M601D-72-10-00-0072 [02], ASB-M601E-72-10-00-0103 [02], and ASB-M601Z-72-10-00-0056 [02] (single document; formatted as service bulletin identifier [revision number]), dated May 31, 2021 (the ASB);

(2) M601E-11 and M601E-11A model turboprop engines with an ESN listed in Attachment 2, List of Affected Parts - Group 2, of the ASB; and

(3) M601D-11, M601E-11AS, and M601E-11S model turboprop engines with propeller shaft part number (P/N) M601-6081.2 or P/N M601-6081.4.

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7210, Turbine Engine Reduction Gear.

**(e) Unsafe Condition**

This AD was prompted by the absence of life limits for propeller shaft P/N M601-6081.6 in the airworthiness limitations section of the applicable GEAC M601 Engine Shop Manual. This AD was also prompted by a report that operators may not have been provided with enough data to determine the accumulated life of certain propeller shafts. The FAA is issuing this AD to prevent the failure of the propeller shaft. The unsafe condition, if not addressed, could result in damage to the engine, damage to the airplane, and reduced control of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

(1) For affected M601F model turboprop engines, before the propeller shaft accumulates 12,000 flight hours (FHs) since first installation on an engine, or before accumulating 350 FHs after the effective date of this AD, whichever occurs later, remove the propeller shaft and replace with a part eligible for installation.

(2) For affected M601D-11, M601E-11, M601E-11A, M601E-11AS, and M601E-11S model turboprop engines:

(i) Within 100 FHs after the effective date of this AD, calculate the total time since new of the propeller shaft in accordance with the Accomplishment Instructions, section 2.2 Group 2 Engines, paragraph 1., of the ASB.

(ii) Remove the propeller shaft prior to reaching its applicable life limit and replace with a part eligible for installation in accordance with the Accomplishment Instructions, section 2.2 Group 2 Engines, paragraph 2., of the ASB.

**(h) Definitions**

(1) For the purpose of this AD, a “part eligible for installation” on M601F, M601E-11, and M601E-11A model turboprop engines is a propeller shaft identified in the Configuration Description, paragraph 1.5, Table 1, of the ASB, as applicable to the engine model, with a calculated life that has not exceeded the applicable life limit.

(2) For the purpose of this AD, a “part eligible for installation” on M601D-11 model turboprop engines is a propeller shaft with P/N M601-6081.2, P/N M601-6081.4, or P/N M601-6081.5, with a calculated life that has not exceeded the applicable life limit.

(3) For the purpose of this AD, a “part eligible for installation” on M601E-11AS and M601E-11S model turboprop engines is a propeller shaft with P/N M601-6081.2, P/N M601-6081.5, or P/N M601-6081.6, with a calculated life that has not exceeded the applicable life limit.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (j)(1) of this AD and email to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(j) Related Information**

(1) For more information about this AD, contact Barbara Caufield, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7146; email: barbara.caufield@faa.gov.



(2) Refer to European Union Aviation Safety Agency (EASA) AD 2021-0154, dated July 1, 2021, for more information. You may examine the EASA AD in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0385.

**(k) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) GE Aviation Czech Alert Service Bulletin (ASB) ASB-M601F-72-10-00-0056 [02], ASB-M601D-72-10-00-0072 [02], ASB-M601E-72-10-00-0103 [02], and ASB-M601Z-72-10-00-0056 [02] (single document; formatted as service bulletin identifier [revision number]), dated May 31, 2021.

(ii) [Reserved]

(3) For GE Aviation Czech service information identified in this AD, contact GE Aviation Czech s.r.o., Beranových 65, 199 02 Praha 9, Letňany, Czech Republic; phone: +420 222 538 111.

(4) You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: [fr.inspection@nara.gov](mailto:fr.inspection@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on June 29, 2022.

Christina Underwood, Acting Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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